FIG. 2A

RRI27VH (SEQ ID NO. 27) CAG GTC CAG CTG GAG CTT GAG CTG GAA GTG GTG AAG CCT (SEQ ID NO. 44) Q V Q L V Q S G A E V K K P DP7-JH4 (SEQ ID NO. 45) CAG GTG CAG CTG GTG CAG TTT GGG GCT GAG GTG AAG AAG CCT (SEQ ID NO. 15) CAG GTC CAG CTG GTG CAG TTT GGG GCT GAA GTG GTG AAG CCT HZVII (SEQ ID NO. 16) CAG GTC CAG CTG GTG CAG TTT GGA GCT GAA GTG AAG AAG CCT HZII (SEQ ID NO. 26) CAG GTC CAG CTG GTG CAG TTT GGA GCT GAA GTG AAG AAG CCT HZII (SEQ ID NO. 26) CAG GTC CAG CTG GTG CAG TTT GGA GCT GAA GTG AAG AAG CCT HZII (SEQ ID NO. 28) CAG GTC CAG CTG GTG CAG ATT TCC TGC AAA GCT TCT GGC TAC GCA (SEQ ID NO. 27) GGG GCC TCA GTG AAG ATT TCC TGC AAA GCT TCT GGC TAC GCA (SEQ ID NO. 24) GA S V K V S C K A S G Y T	. 84
SEQ ID NO. 44) Q V Q L V Q S G A E V K K P	. 84
DP7-JH4 (SEQ ID NO. 43) CAG GTG CAG CTG GTG CAG TCT GGG GCT GAG GTG AAG AAG CCT HZI (SEQ ID NO. 35) CAG GTC CAG CTG GTG CAG TCT GGA GCT GAA GTG GTG AAG ACC CTG (SEQ ID NO. 1) HZI (SEQ ID NO. 36)	. 84
HZI	. 84
HZVII (SEQ ID NO. 1) CAG GTC CAG CTG GTC CAG TCT GGA GCT GAA GTG AAG AAG CCT HZI (SEQ ID NO. 36) V A - V (SEQ ID NO. 2) V A - V K (SEQ ID NO. 28) G A S V K I S C K A S G Y A KRI27VH (SEQ ID NO. 27) GGG GCC TCA GTG AAG ATT TCC TGC AAA GCT TCT GGC TAC GCA	. 84
HZT	. 84
(SEQ ID NO. 28) G A S V K I S C K A S G Y A (SEQ ID NO. 28) GGG GCC TCA GTG AAG ATT TCC TGC AAA GCT TCT GGC TAC GCA (SEQ ID NO. 27) GGG GCC TCA GTG AAG ATT TCC TGC AAA GCT TCT GGC TAC GCA	
(SEQ ID NO. 28) G A S V K I S C K A S G Y A KRI27VH (SEQ ID NO. 27) GGG GCC TCA GTG AAG ATT TCC TGC AAA GCT TCT GGC TAC GCA	
KRI27VH (SEQ ID NO. 27) GGG GCC TCA GTG AAG ATT TCC TGC AAA GCT TCT GGC TAC GCA	
KRI27VH (SEQ ID NO. 27) GGG GCC TCA GTG AAG ATT TCC TGC AAA GCT TCT GGC TAC GCA	
KRI27VH (SEQ ID NO. 27) GGG GCC TCA GTG AAG ATT TCC TGC AAA GCT TCT GGC TAC GCA	
(SEC ID NO 44) C A C II II II II	
DP7-JH4 (SEQ ID NO. 43) GGG GCC TCA GTG AAG GTT TCC TCC AAG GCA TCT GGA TAC ACC	
HZI (SEQ ID NO. 95) GGG GCC TCA GTG AAG GTT TCC TGC AAA GCT TCT GGC TAC GCA	
HZVII (SEQ ID NO. 1) GGG GCC TCA GTG AAG GTT TCC TGC AAA GCT TCT GGC TAC ACC	
HZI (SEQ ID NO. 36) V	
HZVII (SEQ ID NO. 2) T	
•	
CDRI	
(SEQID NO. 28) FSSSWM NWVKQRPG	
KRI27VH (SEQ ID NO. 27) TTC AGT AGT TCT TGG ATG AAC TGG GTG AAG CAG AGG CCT GGA	126
(SEQID NO. 44) FTSYYMHWVRQAPG	
DP7-JH4 (SEQ ID NO. 43) TTC ACC AGC TAC TAT ATG CAC TGG GTG CGA CAG GCC CCT GGA	
(SEQ ID NO. 35) TTC AGT AGT TCT TGG ATG AAC TGG GTG CGA CAG GCC CCT GGA	
HZVII (SEQ ID-NO. 1) TTC ACC AGT GCT TGG ATG AAC TGG GTG CGA CAG GCC CCT GGA	
HZI (SEQ ID NO. 36) R - A	
HZVII (SEQ ID NO. 2) - T - A R - A	
(SEC ID NO 28) G G V - C CDR2	
(OLGERIC. 28) W G C R I Y P G D G	
KRI27VH (SEQ ID NO. 27) CAG GGT CTT GAG TGG ATT GGA CGG ATT TAT CCT GGA GAT GGA	168
(SEQID NO. 44) Q G L E W M G I I N P S G G	
DP7-JH4 (SEQ ID NO. 43) CAA GGG CTT GAG TGG ATG GGA ATA ATC AAC CCT AGT GGT GGT	
(SEQ ID NO. 35) CAG GGT CTT GAG TGG ATT GGA CGG ATT TAT CCT GGA GAT GGA	
(SEQ ID NO. 1) CAG GGT CTT GAG TGG ATG GGA CGG ATT TAT CCT AGT GGT GGA	
(SEQ ID NO. 36)	
HZVII (SEQ ID NO. 2) M S G -	

FIG. 2B

					OD	00										
	(SEQ ID NO. 28)	D	т	N	CD	N	G	K	F	ĸ	G	K	A	T	L	
KR1271	'H (SEQ ID NO. 27)	GA'	T AC	T AA	C TA	CAA	T GG	G AA	G TT(AAC	GGC	AA	G GCC	ACA	CTG 2	10
	(SEQ ID NO. 44)		T		Y		Q	K	F	Q	G	R	v	T	M	
DP7-J1	H4 (SEQ ID NO. 43)	AG	C AC	A AG	C TA	C GC	A CAC	AAC	TTC	CAG	GGC	AG	A GTO	ACC	ATG	
HZI	(SEQ ID NO. 35)	GA'	T AC	T AA	C TA	C GC	A CAC	AAC	TTC	CAG	GGC	AAG	G GCC	ACA	CTG	
HZVII	(SEQ ID NO. 1)														ATG	
HZI	(SEQ ID NO. 36)		_	_	_	A	Q	-	_	Q	_	_		_	_	
HZVII	(SEQ ID NO. 2)	S	-	s	-	A	Q	-	-	Q	-	R	v	-	М	
	(SPO TO NO DO)	_		_												
KRI27V	(SEQ ID NO. 28)	T	A	D	K	s	s	s	T		Y	M	Q	L	S .	
ARIZ I V									ACA	GCC	TAC	ATG	CAG	CTC	AGC 25	2
DP7-JH	(SEQ ID NO. 44)	T	R	D	T	s	T	\$	T	v	Y	М	E		. 8	
HZI		ACC	AGG	GAC	ACG	TCC	ACG	AGC	ACA	GTC	TAC	ATG	GAG	CTG	AGC	
	(SEQ ID NO. 35)												GAG			
HZVII	(SEQ ID NO. 1)	ACT	GCA	GAC	AAA	TCC	ACG	AGC	ACA	GTC	TAC	ATG	GAG	CTC	AGC	
HZI	(SEQ ID NO. 36)	-	-	-	_	-	T	-	-	-	-	_	E	-	-	
HZVII	(SEQ ID NO. 2)	-	-	-	-	-	Т	-	-	V	-	-	·E	-	-	
	(SEQ ID NO. 28)	s	L	т	s	v	D	s.	A	v	Y	F	С	A	R	
KRI27VH	(SEQ ID NO. 27)	AGC	CTG	ACC		-	-								AGA 29	
	(SEQ ID NO. 44)	s	L	R	s	В	D	т	A	v	Y	Y	C			
DP7-JH4	(SEQ ID NO. 43)	AGC	CTG	AGA	-								TGT	A	R	
HZI	(SEQ ID NO. 35)	AGC	CTG	AGA	TCT	GAG	GAC	ACG	GCG	GTC -	TATE !	TAC	TGT	GCG.	AGA	
HZVII	(SEQ ID NO. 1)	AGC	CTG	AGA	TOT-	GAG	CAC	ACC.	oco i	010		110	TGT	GCA.	AGA	
HZI	(SEQ ID NO. 36)	_	_	R	_	E	-	T	~	J1G .	ını.	IAC	101	GCA .	AGA.	
HZVII	(SEQ ID NO. 2)	_	-	R	_	E	_	T	_	_	_	- Y	-	_	-	
						-		•		_	_	1	_	-	-	
	(SEQ ID NO. 28)	E	¥	CDI	R3 E	Α	Y	w	G	Q	G	т	L	**	_	
KRI27VH	(SEQ ID NO. 27)	GAG 1	TAC	GAC										V	T ACT 336	
	(SEQ ID NO. 44)					•••	ino.	w	G	Q	G G	T	L L			
DP7-JH4	(SEQ ID NO. 43)	NNN I	NNN I	NNN I	UNN 1	MNN '	FAC 1							V	T	
HZI	(SEQ ID NO. 35)	GAG 1	CAC	GAC	BAG 4	CT 1	CAC 1	rac c	age c		CA A	on -	01G (FIC F	CT	
HZVII	(SEQ ID NO. 1)	GAG 1	CAC	CGG (TTT	arr (י יינור	nee e	200.0	AA G	OA A	CT. (JTG (TC A	CT.	
HZI	(SEQ ID NO. 36)	_	_	_	_ `	-	_	_	_	- na G	GA A	OT (ru e	rc A	CT	
HZVII	(SEQ ID NO. 2)	-	_	R	v	_	R	_	_	_	_	-	-	-	-	
					•		-	-	-	_	_	_	_	-	_	

FIG. 2C

(SEQ ID NO. 28)	V	S	A	
(SEQ ID NO. 27)	GTC	TCT	GCA	345
(SEQ ID NO. 44)	V	s	s	
(SEQ ID NO. 43)	GTC	TCT	TCA	
(SEQ ID NO. 35)	GTC	TCT	TCA	
(SEQ ID NO. 1)	GTC	тст	TCA	
(SEQ ID NO. 36)	-		s	
(SEQ ID NO. 2)	_		s	
	(SEQ ID NO. 27) (SEQ ID NO. 44) (SEQ ID NO. 43) (SEQ ID NO. 35) (SEQ ID NO. 1) (SEQ ID NO. 36)	(SEQ ID NO. 27) GTC (SEQ ID NO. 44) V (SEQ ID NO. 43) GTC (SEQ ID NO. 35) GTC (SEQ ID NO. 1) GTC (SEQ ID NO. 36) -	(SEQ ID NO. 27) GTC TCT (SEQ ID NO. 44) V S (SEQ ID NO. 43) GTC TCT (SEQ ID NO. 35) GTC TCT (SEQ ID NO. 1) GTC TCT (SEQ ID NO. 36) -	(SEQ ID NO. 27) GTC TCT GCA (SEQ ID NO. 44) V S S (SEQ ID NO. 43) GTC TCT TCA (SEQ ID NO. 35) GTC TCT TCA (SEQ ID NO. 1) GTC TCT TCA (SEQ ID NO. 36) - S

FIG. 4A

	(SEQ ID NO. 30)	D	1	L	М	Т	Q	T	P	L	. 1	1		S	v	т		
KRI27VK	(SEQ ID NO. 29)	GA:	TAT	TTO	ATO	G ACC	CA	AC1	r cc.	A CT	TAT	тт	rg T	CG	GTT	ACC	42	
	(SEQ ID NO. 48)	D	1	v	M	Т	Q	т	P	L	S			s	v	T		
DPK12-J	K4 (SEQ ID NO. 45)	GA:	TAT	GTO	ATO	ACC	CAC	ACT	cc.	A CT	с тс	тст	G T	CC	GTC			
HZI .	(SEQ ID NO. 37)		TAT															
HZIV	(SEQ ID NO. 3)		TAT(
HZI	(SEQ ID NO. 38)	_	_	_	_	-	_	_	_	_	S			-	_	-		
HZIV	(SEQ ID NO. 4)	-	-	v	-	-	-	-	-	-	s			-	-	-		
	(SEQ ID NO. 30)	ľ	G	Q	P	A	s	1	s	С	к	8		R1 S	Q	s		
KRI27VK	(SEQ ID NO. 29)	ATT	GGA	CAA	CCA	GCC	TCT	ATC	TC	r TG	CAA	G TC	A A	GT	CAG	AGC	84	
	(SEQ ID NO. 46)	P	G	Q	P	A	s	I	s	С	к			s	٥	S		
DPK12-J	K4 (SEQ ID NO. 45)	CCT	GGA	CAG	CCG	GCC	TCC	ATC	TCC	TG	AA C	G TC	TAC	ЭТ.	CAG	AGC		
HZI	(SBQ ID NO. 37)		GGA															
HZIV	(SEQ ID NO. 3)		GGA															
HZI	(SEQ ID NO. 38)	P	-	_	_	_	-	_	_	_	_			-	_	-		
HZIV	(SBQ ID NO. 4)	P	-	_	~	-	-	-	-	-	_	-	-		_			
	(SEQ ID NO. 30)	L	L	Y	s	CD:	R1 G	ĸ	т	Y	L	N	w	,	L	L		
KRI27VK	(SEQ ID NO. 29)	CTC	TTA	TAT	AGT	TAA	GGA									TTA 1	100	
	(SEQ ID NO. 46)	L	L	H	s	D	G	K	т	Y	L	Y	N		Y	L	120	
DPK12-JK	4 (SEQ ID NO. 45)	CTC	CTG	CAT	AGT	GAT	GGA											
HZI	(SEQ ID NO. 37)		ATT															
HZIV	(SEQ ID NO. 3)	CTC																
HZI	(SEQ ID NO. 38)	_	_	_	_	_	_	_	_				. 10		- A	1 A		
HZIV	(SEQ ID NO. 4)	-	_	-	_	_	_	-	_	_	_	_	_		_	_		
	(SEQ ID NO. 30)	. Q	R	P	G	Q	s	P	ĸ	R	L	ı	Y		CDR	2 V		
KRI27VK	(SEQ ID NO. 29)	CAG .	AGG (CA	GGC (CAG 1	CT (CCA	AAG	CGC	CTA	ATC	TA	r c	TG C	TG 1	6R	
	(SEQ ID NO. 46)	Q	K	P	G	Q	P	P	Q	L	L	1	Y		E	v	••	
DPK12-JK4	(SEQ ID NO. 45)	CAG	AAG (CA (GC (AG C	CT (CA										
HZI	(SBQ ID NO. 37)	CAG	AAG (CA	GC (AG T	CT (CA	AG	CGC	CTA	ATC	TAT	r c	TG G	TG		
HZIV	(SEQ ID NO. 3)	CAG	AAG (CA C	GC C	AG C	CT C	CAC	CAG	CGC	CTA	ATC	TAT		TC C	TG		
HZI	(SEQ ID NO. 38)	-	K	_	_	_	_	_	_	_					- 0	-		
HZIV	(SEQ ID NO. 4)	-	K	_	~	-	P	~	۵	_	_	_	_	Ì	_	_		
							-		-		-		_		_	_		

FIG. 4B

	(SEQ ID NO. 30)	s	K	L	DR2	s	G	v	Р	D	R	ı	, ,	г	G	s
KRI27VI	(SEQ ID NO. 29)	TC	T AAA	CTG	GAC	TCT	GGA	A GT	cc							
	(SEQ ID NO. 46)		N	R	P	s	G	v	P	D	R				GC A	S 21
DPK12-	JK4 (SEQ ID NO. 45)	TC	C AAC	CGG	TTC	_			-			_				
HZI	(SEQ ID NO. 37)		T AAA													
HZIV	(SEQ ID NO. 3)		TAA 7													
HZI	(SEQ ID NO. 38)			_			-	-		UAL	, AG	G 1 1			GC A	G I
HZIV	(SEQ ID NO. 4)	_	N	R	_	_	_	_	_	_	_	_			_	_
													•	•		
	(SEQ ID NO. 30)	G	s	G	T	D	F	T	L	K	1	1				E
KRI27VK		GG/	TCA	GGA	ACA	GAT	TTT	ACA	CTG	A.A.A	ATO	C AT	C AG	A G	rg g	AG 25
	(SEQ ID NO. 46)	G	S	G	T	D	F	T	L	K	I	s	R			E
	K4 (SEQ ID NO. 45)	GGG	TCA	GGG	ACA	GAT	TTC	ACA	CTG	AAA	ATO	AG	C CG	G G1	rg G.	AG
HZI	(SEQ ID NO. 37)	GGA	TCA	GGA	ACA	GAT	TTT	ACA	CTG	AAA	ATO	AG	C AG	A GT	G G	AG
HZIV	(SEQ ID NO. 3)	GGA	TCA	GGA	ACA	GAT	TTT	ACA	CTG	AAA	ATC	AG	C AG	A G1	G G	AG
HZI	(SEQ ID NO. 38)	-	-	-	-	-	-	-	-	-	-	s	_	_		-
HZIV	(SEQ ID NO. 4)	-	-	-	-	-	-	-	_	-	_	s	_	_		-
RRI27VK	(SEQ ID NO. 30) (SEQ ID NO. 29)	A	E	D CATT	L	G	٧	Y	Y	С	v	Q	G	DR3		
	(SEQ ID NO. 46)	A	GAG E	D.	7 11G (
DPK 12-TE	(4 (SEQ ID NO. 45)			-		G	V	Y	Y	С	M	Q	S	1	(
HZI	(SEQ ID NO. 37)		GAG													
HZIV	(SEQ ID NO. 3)		GAG													
HZI	(SEQ.ID NO. 38)	GCI	GAG (JAT (iga (TT.	TAT	TAC	TGC	GTG	CAA	GG	C AC	A ÇA	T
HZIV	(SEQ ID NO. 4)	-	-	-	v	-	-	-	-	-	-	-	_	-	-	
	(July ID NO. 4)	_	-	-	٧	-	-	-	-	-	-	-	-	-	-	
				CDR	3											
	(SEQ ID NO. 30)	P	₽	Q	T	P	G	G	G	T	K	L	E	I	K	
KRI27VK		TTT	CCT	AG A	CG T	TC G	GT (GA (GG .	ACC A	AG	CTG	GAA	AT	C AA	A 336
TUZIVA	(SEQ ID NO. 29)															
	(SEQ ID NO. 46)	L	P		T	P	G	G	G	T	K	V	E	1	K	
PK12-JK	(SEQ ID NO. 46) 4 (SEQ ID NO. 45)	L CTT	P CCT C	CN A	T .CG T	TC G	GT (GA (GC /	ACC A	AG	GTG	GAA	ATO	: AA	A
OPK12-JK IZI	(SEQ ID NO. 46) 4 (SEQ ID NO. 45) (SEQ ID NO. 37)	L CTT	P CCT C	CN A	T .CG T .CG T	TC G	GT C	GA (GC A	ACC A	AG	GTG GTG	GAA GAA	ATO	AA.	A
DPK12-JK HZI HZIV	(SEQ ID NO. 46) 4 (SEQ ID NO. 45) (SEQ ID NO. 37) (SEQ ID NO. 3)	L CTT	P CCT C	CN A	T .CG T .CG T	TC G	GT C	GA (GC A	ACC A	AG	GTG GTG	GAA GAA	ATO	AA.	A
	(SEQ ID NO. 46) 4 (SEQ ID NO. 45) (SEQ ID NO. 37)	L CTT	P CCT C	CN A	T .CG T .CG T	TC G	GT C	GA (GC A	ACC A	AG	GTG GTG	GAA GAA	ATO	AA.	A